AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method comprising:

forming a silicon germanium layer on a substrate in a processing chamber;

removing, in the processing chamber, a portion of the silicon germanium layer;

following removing a portion of the silicon germanium layer, smoothing, in the processing chamber, a surface of the silicon germanium layer; and

forming a silicon layer on the smoothed surface of the silicon germanium layer, wherein a lattice spacing of the silicon is mismatched with a lattice spacing of the relaxed silicon germanium.

2. (Original) The method of Claim 1, wherein the substrate is not removed from the processing chamber until after the silicon layer is formed.

3. (Original) The method of Claim 2, wherein the processing chamber is kept under vacuum from a time at least as early as during removal of a portion of the silicon germanium layer until after completion of formation of the silicon layer.

4. (Previously Presented) The method of Claim 1, wherein forming the silicon germanium layer comprises:

forming a first layer of silicon germanium on a silicon substrate, wherein from the substrate, the first layer has an increasing concentration of germanium throughout a thickness of the first layer; and

forming a second layer of silicon germanium on the first layer of silicon germanium, wherein the second layer has a constant concentration of germanium throughout a thickness of the second layer.

5. (Original) The method of Claim 4, wherein forming the first layer comprises:

increasing the concentration of germanium in the first layer so that the concentration of germanium increases by 10% for every micron of the thickness of the first layer.

6. (Original) The method of Claim 4, wherein forming the second layer comprises:

including approximately the same concentration of germanium in the second layer as the concentration of germanium in an upper portion of the first layer.

7. (Original) The method of Claim 4, wherein the second layer is formed to a thickness between approximately 0.5 and 1 micron.

8. (Original) The method of Claim 1, wherein removing comprises:

introducing an etchant to a surface of the silicon germanium layer.

9. (Original) The method of Claim 8, wherein the etchant comprises:

at least one of HCl and HBr.

10. (Original) The method of Claim 1, wherein a thickness between approximately 0.1 and 0.2 microns of the silicon germanium layer is removed.

11. (Previously Presented) The method of Claim 1, wherein smoothing comprises:

introducing a smoothing agent to the surface of the silicon germanium layer.

12. (Original) The method of Claim 11, wherein the smoothing agent comprises hydrogen.

13. (Original) The method of Claim 12, wherein the hydrogen is introduced at a temperature of approximately 1100° Celsius.

14. (Original) The method of Claim 1, wherein the silicon layer is formed to a thickness between approximately 50 Å and 1000 Å.

15-20. (Canceled)

21. (Currently Amended) A method comprising:

forming a first layer of silicon germanium on a silicon substrate in a processing chamber, wherein from the substrate the first layer has an increasing concentration of germanium throughout a thickness of the first layer and away from the substrate;

forming, in the processing chamber, a second layer of silicon germanium on the first layer of silicon germanium, wherein the second layer has a constant concentration of germanium throughout a thickness of the second layer;

removing, in the processing chamber, a portion of the second layer;

following removing a portion of the second layer, smoothing, in the processing chamber, a surface of the second layer; and

forming a strained silicon layer on the smoothed surface of the second layer.

22. (Original) The method of Claim 21, wherein the substrate is not removed from the processing chamber until after the silicon layer is formed.

23. (Original) The method of Claim 22, wherein the processing chamber is kept under vacuum from a time at least as early as during removal of a portion of the second layer until after completion of formation of the silicon layer.

24. (Original) The method of Claim 21, wherein forming the first layer comprises:

increasing the concentration of germanium in the first layer so that the concentration of germanium increases by 10% for every micron of the thickness of the first layer.

25. (Original) The method of Claim 21, wherein forming the second layer comprises:

including approximately the same concentration of germanium in the second layer as the concentration of germanium in an upper portion of the first layer.

26. (Original) The method of Claim 21, wherein removing comprises:

introducing an etchant to a surface of the second layer.

27. (Original) The method of Claim 26, wherein the etchant comprises:

at least one of HCl and HBr.

28. (Previously Presented) The method of Claim 21, wherein smoothing comprises:

introducing a smoothing agent to the surface of the second layer.

29. (Original) The method of Claim 28, wherein the smoothing agent comprises hydrogen.

30. (New) The method of claim 1, wherein the strained silicon layer is an expansive strained silicon layer.

31. (New) The method of claim 21, wherein the strained silicon layer is an expansive strained silicon layer.